

Amendment and Response

Applicant: Naoto Kawamura et al.

Serial No.: 10/699,147

Filed: Oct. 31, 2003

Docket No.: 200207667-2/H301.312.102

Title: INTERCONNECT CIRCUIT

REMARKS

The following remarks are made in response to the Office Action mailed Dec. 29, 2005, in which claims 1-8, 10, 11, 22 and 23 were rejected, claims 9 and 12-14 were objected to, and claims 21 and 24 were allowed. With this Response, claims 1, 22 and 23 are amended. Claims 1-29 remain pending in the application, with claims 15-20 and 25-29 being previously withdrawn as being directed to a non-elected invention. Claims 1-14 and 21-24 are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 112

Claims 1, 5, and 22-23 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 22-23, the Examiner finds the term "are located" is not clearly defined. In particular, the Examiner states it is not understood what are being located. With this Response, independent claim 1 is amended to make clear that the contact bumps capable of identifying information from the fluid ejecting device are commonly positioned in each contact array, and contact bumps capable of sending signals to operate the fluid ejecting device are uniquely positioned in each contact array. The amendment is supported in the specification at page 16, lines 6-25, where it is clearly stated that contact areas that are similarly positioned or located within their respective array may be said to be commonly positioned or located, while all other contact areas may be said to be uniquely positioned or located. Claims 22 and 23 have been amended in a manner similar to independent claim 1. In view of the amendments to claims 1, 22 and 23, withdrawal of the rejection of those claims under 35 U.S.C. §112, second paragraph is respectfully requested.

With respect to claim 5, the Examiner states it is not clear how the number of bumps capable of obtaining identity information can be the same if there is only one ID contact 206 in Fig. 5a. Applicants respectfully submit that bumps in the contact array that correspond to the position of the ID contacts in Figs. 5A, 5B and 6 are not the only bumps capable of obtaining identity information. For example, referring to page 18, lines 15-20, the application clearly states that other information and contact areas and bumps, and

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combinations thereof, may be utilized to obtain information of whether a print cartridge is installed and is operable in the chute. As described at page 16, lines 6-25, several different contact areas 71 may be commonly positioned or located. The contact areas that are described as being similarly positioned or located include the TSR contact area, the TSR-RT contact area, a ground contact area, and the ID contact area. Thus, in the illustrated examples of the application, the contact areas in contact area positions 200, 202, 204 and 208 may all be commonly positioned and capable of obtaining or providing identity information regarding the fluid ejecting device. For at least these reasons, withdrawal of the rejection of claim 5 under 35 U.S.C. §112, second paragraph is respectfully requested.

Claim Rejections under 35 U.S.C. § 102

Claims 1-4, 6-8, and 10-11 stand rejected under 35 U.S.C. §102(e) as being anticipated by Browning et al. (U.S. Patent No. 6,837,573).

Regarding independent claim 1, the Office Action alleges Browning et al. teaches a fluid ejection system comprising: a chute structured to receive a fluid ejecting device (referencing chutes 131 in Fig. 13); a contact array comprising a plurality of contact bumps disposed in the chute (referencing arrays of contact bumps 139 in Fig. 13), the contact array being one of at least two contact arrays each having a different pattern of contact bump locations (referencing Fig. 13, allegedly showing different patterns of contact bumps 139), wherein a portion of the contact bumps of each contact array are capable of obtaining identity information from the fluid ejecting device and are located in a same location in each contact array, and wherein another portion of contact bumps of each contact array are capable of sending signals to operate the fluid ejecting device and are located in different locations in each contact array (referencing Fig. 5 as teaching contact arrays 673, wherein there is an ID contact and contacts A1 - A13 that send signals to drive the printhead).

The rejection of claim 1 as being anticipated by Browning et al. is respectfully traversed. In particular, Browning et al. fails to teach at least "the contact array being one of at least two contact arrays each having a different pattern of contact bump locations." The Office Action has characterized Fig. 13 of Browning et al. as showing different patterns of contact bumps 139 in the two chutes 131. However, Applicants respectfully submit that the arrays of contact bumps 139 shown in Fig. 13 do not have different patterns. That is, each array includes six columns of bumps, each column of bumps having the same number of

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bumps as the corresponding column in other array. The corresponding columns of the arrays have the same orientation (i.e. generally diverging or converging). Further, Applicants point out that the pattern of bumps 139 in Fig. 13 corresponds to the pattern illustrated in Figs. 5, 5a and 6 in which the pattern of contacts are the same. It is respectfully submitted that any apparent differences in the patterns of contact bumps 139 in Fig. 13 are due to the hand-drawn quality of the bumps 139 and is not due to any intentional difference as described in the reference. Further, there is absolutely no teaching or suggestion in the specification of Browning et al. that the bumps 139 are differently positioned. In fact, Browning et al. teaches that both chutes 131 are constructed and operate similarly (column 7, lines 41-42). For at least these reasons, it is respectfully submitted that claim 1 is not anticipated by Browning et al., and withdrawal of the rejection under 35 U.S.C. §102(e) is respectfully requested.

Dependent claims 2-4 depend directly from independent claim 1, which is in allowable condition for at least the reasons set forth above. Accordingly, claims 2-4 are also in allowable condition and withdrawal of the rejection under 35 U.S.C. §102(e) is respectfully requested.

With regard to independent claim 6, the Office Action alleges that Browning et al. teaches a printing apparatus comprising: a cartridge comprising either one of a) a first cartridge having a first contact array including a plurality of contact areas (referencing Fig. 13); or b) a second cartridge having a second contact array including a plurality of contact areas (Fig. 13), wherein locations of the contact areas of the first contact array are different from locations of the contact areas of the second contact array (referencing Fig. 13 as allegedly teaching contact pad areas are different for two different cartridges). The Office Action further alleges Browning et al. teaches a carriage that interchangeably receives a first cartridge and the second cartridge; and a controller that identifies whether the first cartridge or the second cartridge is installed in the carriage (referencing Fig. 12 as allegedly teaching carriage datums CY1, CZ1, CX1, CY2, CZ2 and CY3 as identifying which cartridge is installed).

The rejection of independent claim 6 is respectfully traversed. As described above with respect to independent claim 1, Browning et al. in fact teaches that chutes 131 have contact arrays having the same pattern. Further, with regard to contact arrays on first and

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second cartridges, such contact arrays are described in Browning et al. with reference to Figs. 5, 5a and 6. As can be clearly seen in those figures and in the related portions of the specification, the locations of the contact areas of each contact array are the same for each contact array. That is, Browning et al. fails to teach a first cartridge having a first contact array and a second cartridge having a second contact array, wherein locations of the contact areas of the first contact array are different from locations of the contact areas of the second contact array. Finally, Applicants point out that the carriage datums referenced in the Office Action are in fact not in any way connected or in communication with a controller. Rather, the carriage datums are lands that engage corresponding lands in the carriage to properly position the cartridge within the carriage. The carriage datums in fact have no relation to the identity of the cartridge being installed. For at least these reasons, Applicants respectfully submit that claim 6 is allowable over the prior art, and withdrawal of the rejection under 35 U.S.C. §102(e) is respectfully requested.

Dependent claims 7, 8, 10 and 11 each depend directly or indirectly from independent claim 6, which is allowable for at least the reasons set forth above. Accordingly, dependent claims 7, 8, and 10-11 are also in allowable condition and withdrawal of the rejection under 35 U.S.C. §102(e) is respectfully requested.

Allowable Subject Matter

The Office Action indicates claims 21 and 24 are allowed. Applicants thank Examiner for the indication of allowable subject matter.

Claims 12-14 have been objected to as being dependent upon a rejected base claim but are indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 12-14 depend directly from independent claim 6, which is in allowable condition for at least the reasons set forth above. Accordingly, Applicants believe claims 12-14 are also in allowable condition and respectfully decline to rewrite claims 12-14 in independent form at this time.

Claims 9 and 22-23 are indicated to be allowable if rewritten to overcome the rejections under 35 U.S.C. §112, second paragraph, and to include all of the limitations of the base claim and any intervening claims. Claim 9 depends directly from independent claim 6 which is believed in allowable condition for at least the reasons set forth above. Accordingly, claim 9 is also believed in allowable condition. With regard to claims 22-23, Applicants

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respectfully submit that the amendments made in view of the 35 U.S.C. §112 rejection make the claims definite, and because claims 22-23 depend from allowed independent claim 21, claims 22-23 are also in allowable condition. Accordingly, at this time Applicants decline to rewrite claims 9 and 22-23 in independent form.

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CONCLUSION

With the above amendments and for the reasons set forth above, Applicants respectfully submit that claims 1-14 and 21-24 are in condition for allowance and Notice to that effect is respectfully requested.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to either James McDaniel at Telephone No. (208) 296-4095, Facsimile No. (208) 396-3958 or Matthew B. McNutt at Telephone No. (612) 767-2510, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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CERTIFICATE UNDER 37 C.F.R. 1.8:

The undersigned hereby certifies that this paper or papers, as described herein, are being transmitted via telefacsimile to Examiner Lamson D. Nguyen of Group Art Unit 2861, Fax No. (571) 273-8300 on this 2nd day of March, 2006.

By Matthew B. McNutt
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